



NCC

Green Bond Second Opinion

August- 2019; revised April, 2021

NCC is one of the leading constructions and property development companies in Northern Europe, with sales of nearly SEK 54 billion and around 13,600 employees in 2020. The group is divided in three major pillars: construction, industry and development and offers infrastructure projects, builds and refurbishes sustainable housing, offices for public and private customers, produces and sells stone-based materials and performs asphalt paving and piling works and develops and sells sustainable office, commercial and logistics properties in Sweden, Denmark, Finland and Norway. NCC's green bond framework has been revised with regards to the company's reporting requirements and the company's sustainability description.

CICERO Green views efficiency improvements of the construction sector and asphalt production as necessary steps to reach the well below 2°C target. Proceeds will be used for investments in the three project categories: green buildings, waste management and conversion to renewable energy sources.

NCC has climate targets in place, e.g., 60% Scope 1 and 2 emission reduction by 2030, and climate neutrality by 2045, but has not achieved its 50% emission reductions target by 2020. NCC has reached 41% percent reduction in greenhouse gas emissions in 2020, e.g., by replacing fossil fuels with renewable energy sources and restricting energy use to renewable sources. The issuer employs sustainable technologies for reducing emissions from production of construction materials and has streamlined innovative technologies such as NCC Green Asphalt, which has the potential to reduce greenhouse gas emissions from asphalt production with up to 30%.

Despite the risk for lock-in of emissions, CICERO Green views improvements in asphalt production as necessary to reach the well below 2°C target. The asphalt production industry is an example where green alternatives are few and not all commercially viable. With the updated green bond framework, the issuer may provide reporting on a portfolio basis.

Based on the overall assessment of the project categories employed by NCC, the level of commercial availability of technologies in the sector, governance and transparency considerations, NCC's updated green bond framework receives an overall **CICERO Medium Green** shading and a governance score of **Excellent**. The green bond framework shading is based on the overall assessment of the projects that will be financed by the green bond together with governance and transparency considerations. NCC requires a higher level of BREEAM certification than most green bond issuers in the real estate sector. However, the framework would benefit from better energy efficiency requirements in buildings.

SHADES OF GREEN

Based on our review, we rate the NCC's green bond framework **CICERO Medium Green**.

Included in the overall shading is an assessment of the governance structure of the green bond framework. CICERO Shades of Green finds the governance procedures in NCC's framework to be **Excellent**.



GREEN BOND PRINCIPLES

Based on this review, this Framework is found in alignment with the principles.





Contents

1	Terms and methodology	3
	Expressing concerns with 'shades of green'	3
2	Brief description of NCC's green bond framework and related policies	4
	Environmental Strategies and Policies	4
	Use of proceeds	5
	Selection	5
	Management of proceeds	5
	Reporting	6
3	Assessment of NCC's green bond framework and policies	7
	Overall shading	7
	Eligible projects under the NCC's green bond framework	7
	Background	9
	Governance Assessment	10
	Strengths	10
	Pitfalls	11
	Appendix 1:	13
	Referenced Documents List	13
	Appendix 2: About CICERO Shades of Green	14



1 Terms and methodology

This note provides CICERO Shades of Green's (CICERO Green) second opinion of the client's framework dated August 2019, with a revision in 2021. NCC's green bond framework has been revised with regards to the company's reporting requirements and the company's sustainability description. Since this updated Second Opinion based on the revised framework is not a full revision, the expiry date remains the same as the one dated August 2019. Any further amendments or updates to the framework require a revised second opinion. CICERO Green encourages the client to make this second opinion publicly available. If any part of the second opinion is quoted, the full report must be made available.

The second opinion is based on a review of the framework and documentation of the client's policies and processes, as well as information gathered during meetings, teleconferences and email correspondence.

Expressing concerns with 'shades of green'

CICERO Green second opinions are graded dark green, medium green or light green, reflecting a broad, qualitative review of the climate and environmental risks and ambitions. The shading methodology aims to provide transparency to investors that seek to understand and act upon potential exposure to climate risks and impacts. Investments in all shades of green projects are necessary in order to successfully implement the ambition of the Paris agreement. The shades are intended to communicate the following:

CICERO Shades of Green



Dark green is allocated to projects and solutions that correspond to the long-term vision of a low carbon and climate resilient future. Fossil-fueled technologies that lock in long-term emissions do not qualify for financing. Ideally, exposure to transitional and physical climate risk is considered or mitigated.



Medium green is allocated to projects and solutions that represent steps towards the long-term vision, but are not quite there yet. Fossil-fueled technologies that lock in long-term emissions do not qualify for financing. Physical and transition climate risks might be considered.



Light green is allocated to projects and solutions that are climate friendly but do not represent or contribute to the long-term vision. These represent necessary and potentially significant short-term GHG emission reductions, but need to be managed to avoid extension of equipment lifetime that can lock-in fossil fuel elements. Projects may be exposed to the physical and transitional climate risk without appropriate strategies in place to protect them.

Examples



Wind energy projects with a strong governance structure that integrates environmental concerns



Bridging technologies such as plug-in hybrid buses



Efficiency investments for fossil fuel technologies where clean alternatives are not available

Sound governance and transparency processes facilitate delivery of the client's climate and environmental ambitions laid out in the framework. Hence, the governance aspects are carefully considered and reflected in the overall shading of the green bond framework. CICERO Green considers four factors in its review of the client's governance processes: 1) the policies and goals of relevance to the green bond framework; 2) the selection process used to identify and approve eligible projects under the framework, 3) the management of proceeds and 4) the reporting on the projects to investors. Based on these factors, we assign an overall governance grade: Fair, Good or Excellent. Please note this is not a substitute for a full evaluation of the governance of the issuing institution, and does not cover, e.g., corruption.



2 Brief description of NCC's green bond framework and related policies

NCC is one of the leading constructions and property development companies in Northern Europe, with sales of nearly SEK 54 billion and around 13,600 employees in 2020. The group is divided in three major pillars: construction, industry and development. NCC Infrastructure offers entire infrastructure projects, from design and construction to production and services for projects of all sizes. NCC Building builds and refurbishes sustainable housing, offices for public and private customers in Sweden, Denmark, Finland and Norway. NCC Industry produces and sells stone-based materials and performs asphalt paving and pilling works. NCC Property Development develops and sells sustainable office, commercial and logistics properties in prime locations in defined growth markets in the Nordic region.

Environmental Strategies and Policies

NCC has ambitious near- and long-term environmental strategies and targets. The issuer aims to be a leading player in the company's markets and to proactively contribute to reduce the use of non-renewable materials, to increase societal value and develop new technical solutions, products and work methods that promote sustainable development. The CEO is ultimately responsible for NCC's sustainability efforts and NCC's Senior Management Team takes decisions concerning which Group-wide sustainability targets are to be followed up. The group has set the target to be climate neutral by 2045 and to reduce emissions from its own operations (Scope 1 and 2) by 60% by 2030 relative to 2015. In addition, the company aims for 50% reduction in CO₂e (Scope 3) in the four areas with the greatest climate impact: concrete, steel, asphalt and transport. However, NCC does not yet report these emissions in the Annual Sustainability Report. The reduction in emission intensity relative to turnover of 32% (September 2019), stated in the NCC Green Bond Framework is in line with their annual reporting for 2018 and has increased to 42% as of 2020. NCC has achieved an overall 41% percent reduction in total greenhouse gas emissions, from 312 ktCO₂eq in 2015 to 185 ktCO₂eq in 2020, by replacing fossil fuels with renewable energy sources. The previous emissions target to reduce these emissions by 50% by 2020 was not achieved.

NCC reports annually according to the Global Reporting Initiative (GRI). In addition, NCC reports to the UN Global Compact and submits a description of the practical actions the company is pursuing, annually since 2010. According to the issuer, NCC follows the GHG protocol. The grid factors used are country specific and comply with the GHG protocol. Materials and waste strategies and policies of NCC refer to circular supplies, use of non-hazardous materials, resource efficiency and waste reduction. By 2020, NCC aimed to recycle and reuse 70% of its building and construction waste. According to the 2020 Annual Sustainability Report this target has not been achieved. 58% reuse and recycling has been achieved at the end of 2020. The amount of building and construction waste has also declined.

NCC's sustainability framework covers other areas of sustainability, namely health and safety, social inclusion, compliance and portfolio performance. NCC complies with ISO 14001 environmental management system but also with ISO 9001 (quality) and OHSAS 18001 / ISO 45001 (work environment). The issuer prioritizes suppliers that are proactive and systematic in their work related to environmental sustainability. All suppliers must, at a minimum fulfill the conditions outlined in the code of conduct for suppliers. These refer to efficiency of energy and materials use, continuous improvement in environmental work and generation of innovative ideas that lead to positive environmental impacts.

NCC supports the recommendations of the Task Force on Climate-related Disclosure (TCFD) and is in the process of learning to implement scenario stress testing. The issuer informed CICERO Green that basic screening for climate related risks is conducted, considering long-term scenario analysis from meteorological and geological institutions.



Use of proceeds

The green bond framework specifies three categories: green buildings (1), waste management (2) and conversion to renewable energy sources (3). According to the issuer, more than 80% of proceeds will be allocated to green buildings. Green bond proceeds will not be allocated to nuclear power or fossil fuel-based energy generation projects.

The net proceeds can be used to finance the acquisition, development and construction of new eligible projects, finance renovation and upgrade of existing eligible projects and/or refinance eligible projects. Projects and assets that contribute to climate mitigation include investments in low-carbon and clean technologies such as recycling and reuse of construction materials, electrification of equipment in construction material production and high level of certification in buildings. Adaptation to climate change projects include investments in climate resilient buildings.

The split between new projects and refinancing will be included in the NCC green bond investor report. The issuer assumes around 80% of the proceeds will be allocated to new projects and 20% to refinancing. NCC defines new projects as projects that have been taken into operations within one year before the approval by NCC's green bond committee and thereafter.

Selection

The selection process is a key governance factor to consider in CICERO Green's assessment. CICERO Green typically looks at how climate and environmental considerations are considered when evaluating whether projects can qualify for green finance funding. The broader the project categories, the more importance CICERO Green places on the governance process. NCC's green bond framework outlines a transparent selection procedure that is in line with the Green Bond Principles.

Projects and assets must comply with NCC's policies and guidelines in addition to the local laws and regulations¹, including the green terms for each category. The issuer has informed CICERO Green that only projects with high likelihood of having positive, long-term environmental impacts will be approved. All potential eligible projects are evaluated by NCC's green bond committee which consists of representatives from the sustainability and treasury departments. The decision to allocate proceeds requires a consensus from the green bond committee, which meets quarterly or as needed and decides upon the potential projects that meet the requirements of the green bond framework.

The green bond framework includes a process for removing non-complying projects from the pool of funded projects or assets. An updated list of all approved projects will be kept by the committee. In case a project or asset ceases to meet the eligibility criteria, it will be removed from this list.

Management of proceeds

CICERO Green finds the management of proceeds of NCC to be in accordance with the Green Bond Principles. The net proceeds from the issue of green bonds will be credited to a separate account, designated to finance NCC's eligible projects. Any unallocated proceeds will be held in NCC's liquidity reserve. According to the issuer, liquidity reserves can be invested in liquid Swedish Government Bonds, Swedish Covered Mortgage Bonds and short-term Bank Deposits with banks with sufficient credit rating.

¹ Note that Sweden, Finland, Denmark and Norway are on the list of Equator Principles Designated Countries, which is defined as "those countries deemed to have robust environmental and social governance, legislation systems and institutional capacity designed to protect their people and the natural environment." <http://equator-principles.com/designated-countries/>



Reporting

Transparency, reporting, and verification of impacts are key to enable investors to follow the implementation of green finance programs. Procedures for reporting and disclosure of green finance investments are also vital to build confidence that green finance is contributing towards a sustainable and climate-friendly future, both among investors and in society.

NCC will provide an annual Green Bond Investor Report which will include the following: the total amount of green bonds issued and outstanding; a list of eligible projects financed with proceeds from green bonds, including allocated and disbursed amounts and a brief description of the projects and their main environmental impact; expected or actual environmental impacts from eligible projects when relevant and feasible – mainly emissions of CO₂eq but also project specific performance indicators; the distribution of allocation between different eligible project categories; a description of the allocation between financing of new projects and refinancing and the balance between the separate account and the amounts held as part of the liquidity reserve.

The information may be provided on an aggregated portfolio basis due to confidentiality agreements, competitiveness consideration, or numerous projects limiting the amount of detail that can be made available.

The external auditor will review the internal tracking method, the allocation of funds from the green bond proceeds and the green bond investor report, on an annual basis. The green bond framework, this second party opinion, the Green Bond Investor Report and the opinion of the external auditor will be made publicly available on the NCC website (www.ncc.group).



3 Assessment of NCC’s green bond framework and policies



The framework and procedures for NCC’s green bond investments are assessed and their strengths and weaknesses are discussed in this section. The strengths of an investment framework with respect to environmental impact are areas where it clearly supports low-carbon projects; weaknesses are typically areas that are unclear or too general. Pitfalls are also raised in this section to note areas where NCC should be aware of potential macro-level impacts of investment projects.

Overall shading

Based on the project category shadings detailed below, and consideration of environmental ambitions and governance structure reflected in NCC’s green bond framework, we rate the framework **CICERO Medium Green**. The shading is based on the overall assessment of the projects that will be financed by the green bond together with governance and transparency considerations.

Eligible projects under the NCC’s green bond framework

At the basic level, the selection of eligible project categories is the primary mechanism to ensure that projects deliver environmental benefits. Through selection of project categories with clear environmental benefits, green bonds aim to provide investors with certainty that their investments deliver environmental returns as well as financial returns. The Green Bonds Principles (GBP) state that the “overall environmental profile” of a project should be assessed and that the selection process should be well defined.

Category	Eligible project types	Green Shading and some concerns
Green Buildings  	<ul style="list-style-type: none"> • New commercial, residential and societal properties that have or will have either of the following certifications: a) BREEAM Excellent or b) DGNB Gold and that have an energy use (kWh/m²/year) that is at least 20% lower than the requirements in national regulations (applies for Sweden). • Properties where major renovation/retrofitting has resulted in a reduced energy use (kWh/m²/year) of at least a 30%. 	Light to Medium Green <ul style="list-style-type: none"> ✓ In a low carbon 2050 perspective the energy performance of buildings is expected to be improved, with passive and plus house technologies becoming mainstream and the energy performance of existing buildings greatly improved through refurbishments. ✓ A dark green shading would require passive or plus house technologies. Building certifications cover important sustainability aspects for buildings, including emission reductions but they do not necessarily ensure low energy consumption. ✓ NCC has in place energy requirements for Sweden where the majority of the proceeds will be used. However, buildings in other countries (e.g.



Denmark, Norway and Finland) do not include any energy consumption requirements. This raises concerns that buildings might not be energy efficient. Some of these countries still have a significant share of fossil fuels in their grids. For this reason, the green buildings category receives a light to medium green shading.

- ✓ In addition to climate issues, BREEAM covers a broader set of issues, which is important to overall sustainable development. Building materials have a significant impact on the sustainability of buildings as they determine the building's energy consumption and environmental impacts. Consider low-emission, durable, reusable and recyclable materials.
- ✓ Access to biking lanes and public transport offer a good option for reducing carbon emissions and reduces other negative impacts from commuting such as congestion.
- ✓ NCC has informed CICERO Green that most buildings will aim for BREEAM Excellent and only a limited number (around 10- 15%) will be DGNB certified.

Waste management



- Waste prevention
- Waste reduction
- Recycling and reuse
- Rehabilitation of contaminated land: Investments in equipment for the recycling of mineralogical materials (RAP = recycled asphalt, concrete, bricks, shafts and earth masses, swept up anti-slip materials)

Dark Green

- ✓ Waste recycling strategies are crucial for environmental and social wellbeing.
- ✓ NCC has confirmed that waste-to-energy (WTE) projects will be excluded.
- ✓ Fossil fuels are excluded from this category and no significant emissions arise from the recycling process.

Conversion to renewable energy sources



- Conversion of asphalt plants from fossil to renewable fuels
- Conversion of stone crushers and other equipment from fossil fuels to electricity

Medium Green

- ✓ Due to high emissions related to asphalt as end-product, this category receives a medium green shading.
- ✓ The asphalt plants will be converted to run on biofuels (e.g. wood pellets). NCC



- will use locally sourced biofuels (wood pellets).
- ✓ While electric and biofueled equipment is preferable to those that directly use fossil fuels, we should nevertheless be aware of the indirect GHG emissions stemming from the production and strive to keep increasing their efficiency.
- ✓ Complex impacts related to use of biofuels include CO₂ emissions and equivalents and raise health concerns related to local air pollution
- ✓ Greening of asphalt production through decreasing manufacturing temperatures and replacing heating fuels with renewable sources is essential to the low-carbon transition. However, the main component material in asphalt (bitumen) is a petroleum product

Table 1. Eligible project categories

Background

The production of asphalt is mainly based on fossil fuels. Heating and drying the aggregate in the asphalt mix is most energy intensive in the production process and traditionally involves burning of oil or LPG. New developments in road engineering technologies have the potential to reduce the manufacturing and application temperatures of asphalt mixes².

Global warming potential of emissions occurring during the production of asphalt can be greatly reduced by reducing the production temperatures and using biomass (e.g. wood pellets, wood chips) instead of fossil fuels. Greenhouse gas emissions from asphalt production can decrease significantly with use of wood chips and straw or wood pellets instead of LPG³. These new technologies are more environmentally friendly but not all are as efficient as the use of the traditional hot asphalt. For example, cold-mix asphalt uses temperatures lower than 60°C and has the highest potential for emission reductions, but it is only used in road rehabilitations or low traffic roads. Warm-mix (<100°C) and half-warm-mix (110-140°C) are most commonly used technologies since their performance is comparable to the traditional hot-mix asphalt (>150°C).

Overall, 70% of asphalt is used in road construction⁴. Statistics from the Swedish Transport Agency show that emissions from road traffic have increased in Sweden in 2018, after a steady fall in the previous years, mostly due to increased heavy-duty traffic. Furthermore, an increasing trend in purchases of new passenger vehicles has been registered. Diesel fueled vehicles are highest percentage of new cars while electric vehicles have more than doubled since 2014⁵. The Swedish government has committed to 70 percent reduction in traffic related emissions by 2030. To reach this goal, at least eight percent reduction in yearly emissions is needed. Emissions from road traffic have increased with 2,8% from 2017 to 2018, while total greenhouse gas emissions have also increased

² Rubio et al., 2013. Comparative analysis of emissions from the manufacture and use of hot and half-warm mix asphalt. Journal of Cleaner Production. <http://dx.doi.org/10.1016/j.jclepro.2012.09.036>

³ Bühler F., Nguyen T.-V., Elmegaard B., 2016, Sustainable production of asphalt using biomass as primary process fuel, Chemical Engineering Transactions, 52, 685-690 DOI:10.3303/CET1652115

⁴ https://doi.org/10.1002/14356007.a03_169.pub2

⁵ <https://www.transportstyrelsen.se/sv/vagtrafik/statistik/Statistik-over-koldioxidutslapp/>

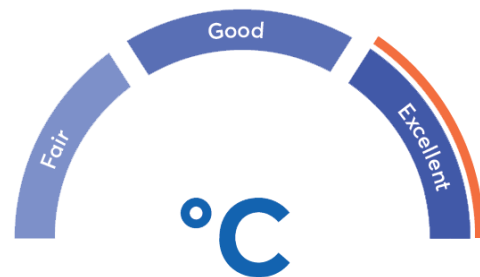


with 0,4% compared to 2017⁶. Norway has set a goal of reducing greenhouse gasses causing climate changes by at least 40% by 2030 from the country's 1990 levels. That could be hard to reach as CO₂ emissions are still higher today than in 1990 even with an aggressive subsidy scheme for electric cars. A similar trend can be observed in other Nordic countries.

Governance Assessment

Four aspects are studied when assessing the NCC's governance procedures: 1) the policies and goals of relevance to the green bond framework; 2) the selection process used to identify eligible projects under the framework; 3) the management of proceeds; and 4) the reporting on the projects to investors. Based on these aspects, an overall grading is given on governance strength falling into one of three classes: Fair, Good or Excellent. Please note this is not a substitute for a full evaluation of the governance of the issuing institution, and does not cover, e.g., corruption.

NCC has in place strong environmental goals and targets, good mitigation plans, a sound selection process and comprehensive and transparent reporting. The issuer screens for resilience based on scenario analysis and supports the TCFD recommendation⁷ while working towards including scenario stress testing in the future. NCC has specific climate targets and recently added a target for its most relevant Scope 3 emissions but has not achieved its Scope 1 and 2 2020 emissions reduction target. In addition, NCC has not achieved its 2020 waste recycling target. The selection process involves consensus decision-making and life-cycle considerations. The green bond committee has appropriate environmental competence. NCC is transparent with their methodology and commit to report on a good selection of impact metrics. However, in the updated framework NCC has chosen to report on an aggregated portfolio basis which. The overall assessment of NCC's governance structure and processes gives it a rating of **Excellent**.



Strengths

NCC has set the target to be climate neutral by 2045. The construction sector accounts for nearly 19% of global greenhouse gas emissions⁸. Construction and expansion of infrastructure is linked to economic growth. While the sector is a major pollutant globally, buildings and infrastructure are particularly vulnerable to climate change related events, such as floods, heat and extreme precipitation. Energy efficient buildings, use of sustainable construction materials and electrification of equipment in the production of materials and construction sites can decrease the emissions burden associated with this sector. NCC has taken significant steps to reduce their footprint. However, further upscaling of green technologies and a sound strategy for avoiding rebound effects are needed. The construction industry needs to focus on the full lifecycle of the materials they are producing, from cradle-to-grave. Targeting a drastic reduction in damaging chemicals and materials and an expansion in the use of bio-based alternatives will improve many aspects of the global environment, such as sustainability and responsible consumption and production.

The issuer has informed CICERO Green that climate risk analysis is conducted prior to every project start. The analysis is based on long-term scenario stress testing from meteorological and geological institutes. CICERO Green is encouraged by the environmental competence in the sustainability department for all project categories. The sustainability department employs environmental engineers and lawyers, some with more than 25 years of experience. Furthermore, NCC has in place an internal consultant organization with engineering experts in various

⁶ <https://www.ssb.no/en/natur-og-miljo/statistikker/klimagassn/aar-forelopige>

⁷ <https://www.fsb-tcf.org/publications/final-recommendations-report/>

⁸ <https://doi.org/10.1080/15732479.2017.1327545>



fields such as energy, humidity, biological diversity, environmental certification, storm water handling, soil remediation and more.

NCC employs a multitude of innovative technologies to reduce greenhouse gas emissions and support climate change adaptation strategies. For example, NCC Green Asphalt is produced through a method that generates up to 30% lower emissions per production unit than the traditional methods of producing hot asphalt. The lower manufacturing temperatures required for producing NCC Green Asphalt also reduce emissions of other harmful substances, such as nitrogen dioxide, carbon monoxide and sulphur dioxide.

As part of the issuer's sustainability policy to avoid rebound effects, NCC in its quality of real estate operator, has in place a sustainability tenant contract that regulates the roles of the landlord and tenant as well as their respective rights, obligations and intentions regarding the work on sustainability issues from a green, social and economic perspective.

NCC invests in research and development of new technologies for production of construction material, permeable pavements and technologies for charging electric vehicles in motion. These technologies represent significant improvements and support climate adaptation strategies in the construction and transportation sectors.

Weaknesses

We find no substantial weaknesses in NCC's Green Bond Framework.

Pitfalls

CICERO Green is encouraged by NCC's initiative to convert asphalt plants to renewable fuels, hence the category that includes NCC Green Asphalt production (conversion to renewable energy) has been shaded Medium Green. However, NCC Green Asphalt make up for only 30% of the company's total asphalt production, in Sweden. Furthermore, investments in new roads, even considering the innovative technologies used for reducing emissions from material production, bears a significant risk of emission lock-ins. Through investments into capacity increasing infrastructure without stronger incentives for increasing the use of low- and zero-emission vehicles, it is likely that Nordic countries will fall short of achieving their targets.

NCC Green Asphalt production implies that temperatures are reduced to 120°C, which led to a decrease in CO₂ emissions by up to 30% per unit of production while emissions of nitrogen and sulphur dioxide as well as carbon monoxide are significantly reduced as well. Moreover, the global warming potential of emissions occurring during the production of asphalt can be greatly reduced by using biomass instead of fossil fuels. With wood pellets, the emissions are around 80 % lower than the ones of LPG. CICERO Green views improvements in asphalt production as necessary to reach the well below 2°C target. However, the fuel conversion is not enough to support the overall emission decrease from road traffic. To be in line with the country targets and receive a dark green shading, more ambitious initiatives are needed to reduce emissions, such as promoting strong incentives for use of bicycles, public transportation and electric vehicles.

Despite significant potential for emission reductions, the risk for lock-in of emissions from asphalt production remain high. Fossil elements, such as bitumen constitute a large part in the material mix and are essential components in asphalt production. Furthermore, processing of raw materials in the construction sector generates high amounts of waste, raising concerns related to air pollution and waste management.

NCC produces and sells asphalt to a wide range of customers including construction of new roads. While roads are built for both electric and fossil fueled vehicles, the emissions from road traffic in Nordic countries in Europe continue to increase due to the increase in use of fossil fueled vehicles. Increased capacity for fossil fueled vehicles implied by construction of roads represents a pitfall in achieving the 2°C target of the Paris Agreement.

In a low carbon 2050 perspective, the energy performance of buildings is expected to be improved, with passive house technology becoming mainstream and the energy performance of existing buildings greatly improved



through refurbishments. The issuer is taking a step in this direction with energy efficiency criteria for both new buildings and in renovation of existing buildings.



Appendix 1: Referenced Documents List

Document Number	Document Name	Description
1	NCC Green Bonds Framework	This document comprises NCC's Green Bonds Framework and how it intends to use proceeds, how it plans to evaluate and select eligible projects, manages the proceeds and reports to investors.
2	NCC annual and sustainability report (2018 & 2020)	This document outlines NCC's ambitions and goals for the near and long term.
3	NCC Sustainability policy: https://www.ncc.group/sustainability/sustainability-policy/	
4	NCC Code of Conduct: https://www.ncc.group/sustainability/code-of-conduct/	This webpage provides guidance on how employees should conduct themselves and make the correct decisions in everyday work.
5	NCC Supplier Code of conduct: https://www.ncc.group/sustainability/code-of-conduct/ncc-supplier-code-of-conduct/	This document covers the expectations that Akademiska Hus has from their suppliers, related to laws, regulations, standards and sustainability and ethics.
6	ISO certificates: https://www.ncc.group/sustainability/sustainability-governance/	This webpage certifies that NCC is compliant with the requirements of ISO 14001, ISO 9001 and OHSAS 18001 standards. The Certificate Appendix indicates the locations and activities for which each unit is approved.
7	Business area Property Developments action plan - "Presentation_Guiding_Star_190516.pdf" Confidential	-This presentation outlines the action plan for future property developments.
8	Business area Buildings action plan - "Sustainability and Compliance BA BuSE 2019" Confidential	This presentation outlines the action plan for sustainability compliance.



Appendix 2: About CICERO Shades of Green

CICERO Green is a subsidiary of the climate research institute CICERO. CICERO is Norway's foremost institute for interdisciplinary climate research. We deliver new insight that helps solve the climate challenge and strengthen international cooperation. CICERO has garnered attention for its work on the effects of manmade emissions on the climate and has played an active role in the UN's IPCC since 1995. CICERO staff provide quality control and methodological development for CICERO Green.

CICERO Green provides second opinions on institutions' frameworks and guidance for assessing and selecting eligible projects for green bond investments. CICERO Green is internationally recognized as a leading provider of independent reviews of green bonds, since the market's inception in 2008. CICERO Green is independent of the entity issuing the bond, its directors, senior management and advisers, and is remunerated in a way that prevents any conflicts of interests arising as a result of the fee structure. CICERO Green operates independently from the financial sector and other stakeholders to preserve the unbiased nature and high quality of second opinions.

We work with both international and domestic issuers, drawing on the global expertise of the Expert Network on Second Opinions (ENSO). Led by CICERO Green, ENSO contributes expertise to the second opinions, and is comprised of a network of trusted, independent research institutions and reputable experts on climate change and other environmental issues, including the Basque Center for Climate Change (BC3), the Stockholm Environment Institute, the Institute of Energy, Environment and Economy at Tsinghua University and the International Institute for Sustainable Development (IISD).

